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THE INTERESTS OF CHILDREN OF THE PRIMARY AND INTERMEDIATE GRADES IN THE USE OF COLOR

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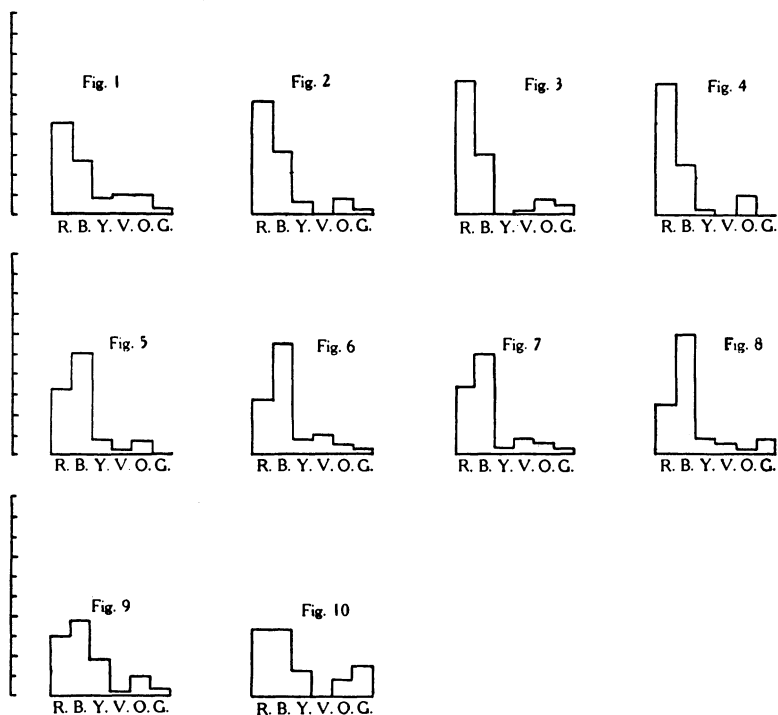
The following study is an attempt to find out the primary interests of children of the lower grades in the use of color. It deals with three questions: (1) In what colors are children of the primary and intermediate grades most interested? (2) In their undirected representations, do they give major consideration to accuracy of representation, or to playing with favorite colors? (3) In following their own initiative, do they make use of color primarily as a means of representation, or for the pleasurable sensations derived?

In order to ascertain with some degree of certainty the colors that give children the most delightful sensations, the following test was arranged. Colored squares of paper were prepared, representing each of the spectrum colors, and sets were given to each child of the first three grades to mount in the order of his preference. The pupils of the fourth and fifth grades were given the spectrum colors, and after they had used them, each one was asked to designate his favorite color and his second choice. Tables of frequency were compiled from these data, and the results are shown in surfaces of frequency in Chart I. An examination of the data for the first three grades showed that it was not worth while to compute tables beyond the second choice. Color as the expression of a third, fourth, fifth, or sixth choice was merely a perfunctory matter.

In the surfaces of frequency of Chart I, the first- and second-choice colors of 74 children of the first grade, 50 of the second grade, 60 of the third grade, 42 of the fourth grade, and 39 of the fifth grade are given. The ordinate shows the percentage of children, and the abscissa the spectrum colors in the following order: red, blue, yellow, violet, orange, green. Figs. 1 to 5 inclusive show the

favorite colors of the first five grades respectively; and Figs. 6 to 10 inclusive show the second-choice colors of the same pupils. The curves indicate that red and blue are the colors in which the large majority of children are most interested. However, the color interests of the children of the intermediate grades appear to have widened.

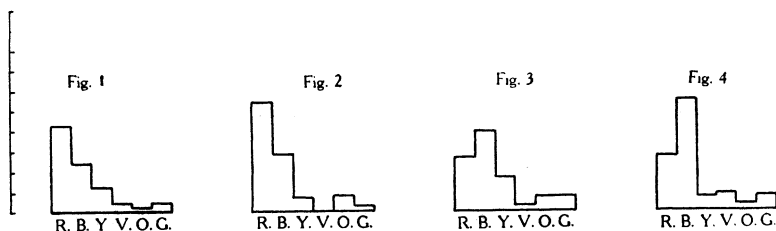
CHART I



There was no doubt regarding the expression of individual choices of colors by the pupils of the fourth and fifth grades in the foregoing test. However, as the pupils of the first, second, and third grades did have an opportunity to see how other pupils of their grade arranged the colors, it was thought that they might have been influenced to some extent by imitation. Hence, as a check on the validity of the results obtained from these grades, thirty children of the same grades in another school were given the

same test, individually. The surfaces of frequency obtained by compiling the choices of this group were then compared with the surfaces of frequency obtained by combining Figs. 1, 2, and 3 of Chart I, and likewise Figs. 7, 8, and 9, when it was found that the curves were almost identical. These curves are shown in the following Chart II in which Fig. 1 gives the distribution of the favorite colors of the group of thirty children, and Fig. 2 shows that of the composite group; while Figs. 3 and 4 show the distribution of second-choice colors of the same groups respectively.

CHART II



Hectographed outlines of birds were next given to the children with the instructions that they were to fill in the outlines just as they pleased. The birds chosen for the test were those common to the vicinity. In fact, they were seen daily in the trees on the school ground, and were the subject of nature-study lessons several weeks before the tests were given. All of the pupils recognized the birds, as was ascertained by holding the outlines before the class, before giving them to the children with the instructions mentioned above.

Figs. 1 to 5 of Chart III show the way in which the outlines of the bluejay were colored by the pupils of the first five grades, respectively. The abscissa indicates the percentage of children, and the ordinate the following colors (reading from left to right): red, blue, yellow, brown, any combination of two different colors designated in the chart by *M*, and conglomerate mass of colors.

Chart IV shows the coloring of the outlines of the woodpecker, and is similar in every respect to Chart III, as is Chart V that follows, which shows the coloring of the outlines of the English sparrow.

A careful examination of the data shown in Figs. 1, 2, and 3 of Charts III, IV, and V reveals several interesting facts regarding

CHART III

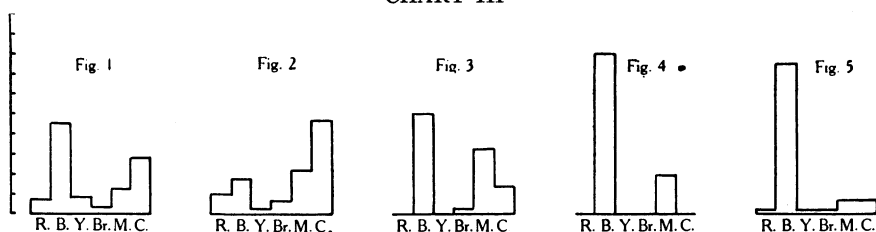
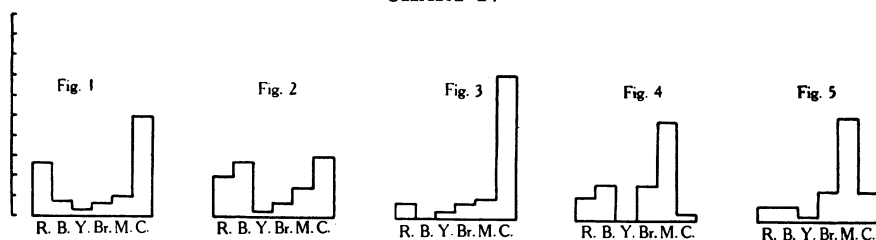
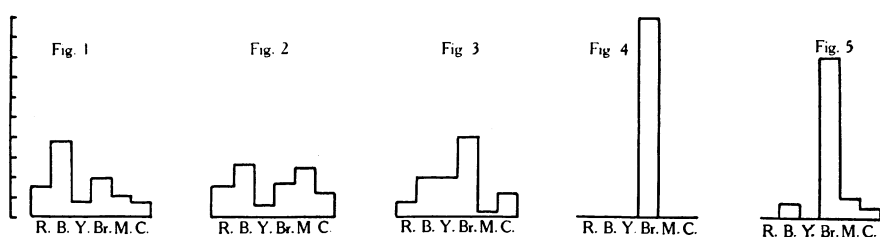


CHART IV



NOTE.—In every drawing of the pupils of the fourth and fifth grades the head of the woodpecker is colored red. For percentage of pupils of the other grades who colored the head the same way, see Chart VI. Hence, the colors shown in Chart IV refer to body, wings, and tail. For example, the pupil may have colored the head correctly and the body, wings, and tail a single color, a combination of two colors, or a conglomeration of colors.

CHART V



the use of color by the pupils of the primary grades: (1) A considerable number filled in the outlines without manifesting any concern whatever in exact representation, as was evidenced by the indis-

criminate use of all the colors of the spectrum in painting a single bird. (2) Some of the children seemed to take a cue from the most striking detail, and filled in the outline with that color only. For example, they colored the jay with a single shade of blue and the woodpecker red. (3) Another group made serious attempts at truthful representation, indicated by their attention to the proportions of the different details. However, their interest in strong color seemed to have caused them to err grievously in the choice of colors necessary to make even the semblance of a truthful representation.

The work of the fourth and fifth grades differed markedly from that of the lower grades, although a few of the pupils appeared to be just as erratic and indifferent to correct results as the younger children. (1) A majority of the pupils made use of tones of color in representing a bird, a fact that was not observed in a single drawing of the primary children. (2) The pupils of the intermediate grades, excepting the erratic ones referred to above, consumed much more time in filling in the outlines, thus showing the presence of external standards in contrast with the spontaneity and absence of standards in the minds of most of the children of the first three grades. (3) The intermediate-grade pupils greatly increased their percentages in the selection of correct colors, and in attention given to details, as is shown by the surfaces of frequency in Charts III, IV, and V, and in Chart VI that follows.

CHART VI

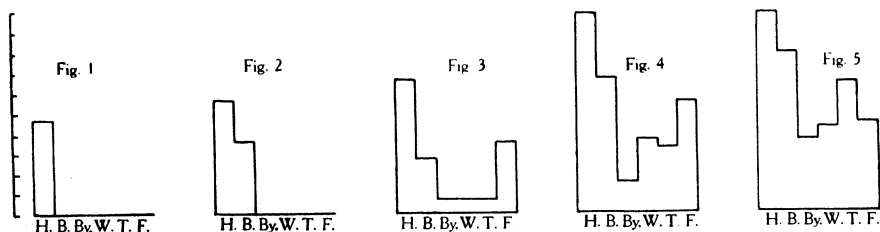


Chart VI was compiled from the drawings of the woodpecker shown in Chart IV. The ordinate gives the percentage, and the abscissa the following details (reading from left to right): head, bill, body, wings, tail, feet. The woodpecker was chosen for the reason that its details are most marked, and it had been closely

observed by the classes in their nature-study lessons several weeks before the tests were given.

The surfaces of frequency for the pupils of the first three grades point out that only the most significant details were represented with any degree of accuracy. Even these were ignored in many instances by children who apparently became intoxicated with the bright colors they were permitted to use in free and undirected play. With the fourth and fifth grades the drawings were altogether different. They represented significant details with great accuracy, and truthfully portrayed the minor details in almost 50 per cent of the cases.

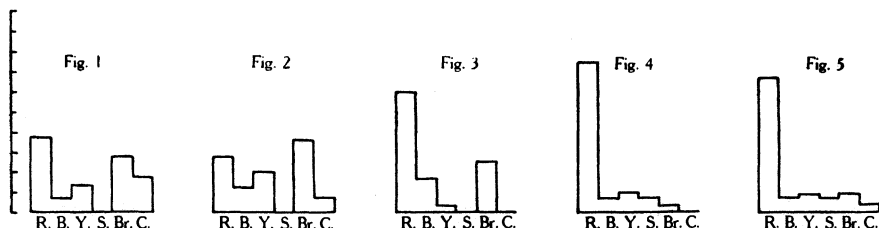
Another noticeable fact in the drawings was the relative development of the power to grasp and give attention to details as the pupil advanced through the primary into the intermediate grades. This appeared to be the rise of a new interest in more exact representation due to the consciousness of an objective standard of form and color appropriateness resulting from age readjustments, and instruction. This observation was further corroborated by the data shown in Chart IV, in which the grosser errors tended to disappear as the pupils advanced; shown by the facts that 55 per cent of the pupils of the first and second grades, and 21 per cent of the third grade colored all parts of the bird the same, while only 12 per cent of the fourth grade and 9 per cent of the fifth grade committed the same error.

A different situation was presented in the next test. The pupils were asked to paint a sled. The teachers refrained from giving any directions or suggestions, and the children had to rely upon their own initiative for the selection of color, and the form they were asked to represent. The results are shown in Chart VII, in which the ordinate shows the percentage, and the abscissa the following colors: red, blue, yellow, any of the secondary colors, brown or black, conglomeration of colors.

Excepting two facts, the results of the above test do not differ essentially from those of previous tests: (1) The decrease of red as a leading color in the first two grades and the large use of neutral were certainly the result of a complication of the problem of form with the free use of color. Favorite colors seemed to be forgotten by many of the pupils in their efforts to meet the requirements of

form, and as a result they reacted in the way they had been taught to react in drawing objects, i.e., by employing light and dark. Some left the drawing simply in outline done with the black or brown pencil, thus showing that the problem of form had deprived them of the pleasure accruing from a free use of color; while others proceeded to fill in the outlines with the color or colors that pleased

CHART VII



them. (2) The decrease of the use of blue by all the pupils, especially those of the third, fourth, and fifth grades, was evidently due to psychological reasons. Blue is a color of rest, while red is a color of action. Therefore, the association of a color of rest with the drawing of a sled, which suggests one of the favorite and most active sports, could hardly be expected.

Without taking into consideration the pedagogy of color in relation to the art work of our public schools, we believe that this study at least warrants the following answers to the questions at issue: (1) Children of both primary and intermediate grades are interested in strong colors, chiefly red and blue. (2) The majority of children of the primary grades are interested more in the sensations derived from a free use of color, than in exact representation. They paint with great freedom, and apparently take little interest in the perfection of details. On the other hand, most of the children of the intermediate grades draw with less freedom but pay greater attention to accuracy of details, and manifest greater interest in the character of their results. They seem to realize the importance of objective standards, and put forth serious efforts to master the external facts that lead to a realization of their standards. (3) The interest of most of the children of the primary grades centers around sensation, while the intermediate-grade children appear to employ color primarily for purposes of representation.